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THE PLUM ISLAND NIGHT HERONS.

BY S. WALDO BAILEY.

For a region which on casual or hasty observation appears to be barren and dreary, devoid of many of those features which go to make the attractive and picturesque in nature, I have found on intimate acquaintance, Plum Island lying off the northeast coast of Massachusetts, to be a most interesting and fruitful locality for study and research.

Separated from the mainland by a broad stretch of level marsh and several tidal creeks, on the north, the latter widening into a broad sound farther south, the island extends from the mouth of the Merrimac River on the north some nine miles southward to Ipswich River not far from the northerly base of Cape Ann, but averages scarcely half a mile in width.

Geologically it is a series of wave washed, wind blown sand dunes, overlaying by no great depth submerged drumlins, the inundation of these being due to the slow subsidence of the coast line since the glacial epoch. The dunes on the landward side are bordered by an irregular narrow strip of marsh, cut by numerous small intersecting ditches and sinuous tidal creeks. Bordering the mainland, broad stretches of marsh come down to meet these creeks. Nearly the whole of the marshy area is covered completely by every monthly high run of tides.

Thoreau writing of the region over sixty-five years ago described it as a place of "dreary bluffs of sand and valleys plowed by the wind, where you might expect to discover the bones of a caravan. . . . probably Massachusetts does not furnish a more grand and dreary walk. On the sea side there are only a distant sail and a few coots to break the grand monotony. A solitary stake stuck up or a sharper sandhill than usual is remarkable as a landmark for miles; while for music you hear only the ceaseless sound of the surf and the dreary peep of the beach birds."

Conditions have changed but little since Thoreau's time. A small summer colony at the northern end of the Island connected with Newburyport by trolley, and a hotel and a few summer cot-

tages at the southern extremity or "Bluffs" add life and activity to these portions during a few months of the year, and a federal lighthouse and two life saving stations maintain a watchful eye seaward. But between these points of activity lie long stretches of bleak dunes and rolling ridges over which the winds of winter sweep with relentless fury blowing the looser particles of sand much in the manner of snow, cutting into, and altering somewhat the contour of the hillocks from year to year. And in midsummer the sun beats down with a torrid intenseness.

Occasionally among the wind swept hollows between the dunes one finds a rudely chipped implement or arrow head of flint (much polished and worn by the action of the sand) a silent reminder of the former wild inhabitants of the land. And like a hundred and one other places along the Atlantic coast, this place has its traditional buried treasure, left years ago by Capt. Kidd, and now only awaiting the search and industry of some keen prospector to bring it to light.

But bleak and desolate as the locality would seem, and at certain seasons is certainly, the land is not wholly barren. In many favored parts, sheltered from the force of the winds and shifting sands, nature attempts to cover the nakedness of the soil with a mantle of vegetation. The botanist may find much here of interest in his particular line of study, and a survey of the entire region would reward the student with a list of species quite respectable in numbers. On the tops and leeward sides of the dunes one finds the coarse beach grass, *Ammophila arenaria*, growing abundantly, its plummy heads nodding before every breeze, and its long slender recurving leaves describing dainty arcs in the sand around their base.

And growing along in company with it but in lesser quantities is the beach pea, *Lathyrus maritimus*, the long deep roots of both these species acting beneficially as sand binders. Such coastwise species as the yellow-eyed grass, *Xyris flexuosa*, and the beach heather, *Hudsonia tomentosa*, find a congenial soil here, the last named, forming in places on the levels between the higher dunes, a pale green carpet to cover the brown of the sand, and in its season of bloom, further adds to the colored tapestry with a rich display of deep yellow. And so I might continue, and enumerate a long list of

herbaceous plants and come at length to the low shrubs like sweet fern, *Myrica asplenifolia*, and bayberry, *Myrica carolinensis*, both of which grow plentifully here. And too, the beach plum *Prunus maritima*, from which the Island receives its name, once growing here abundantly now nearly extirpated by the ravages of the brown-tail moth, *Euproctis chrysorrhea*: and, varying from a low shrub, to a tree of from 15 to 25 feet in height, is the black cherry, *Prunus serotina*, growing abundantly in many places all along the Island.

On the landward or marsh side of the Island a variety of grasses may be found, many acres of which are harvested each year and fed to the stock on the adjacent inland farms. The low seaside gerardia, *Gerardia maritima*, and heathery marsh rosemary, *Limonium carolinianum*, and the less abundant, but showy Canadian burnet, *Sanguisobra canadensis*, all these and many more may be found scattered over the broad expanse of the marshes, both of the Island and mainland.

One is surprised too, at the number and considerable size of the trees that grow in certain of the deep bowl-like hollows between the dunes. There are a fair number of such species as poplar, *Populus tremuloides*; black oak, *Quercus velutina*; elm, *Ulmus americana*; tupelo, *Nyssa sylvatica*; red maple, *Acer rubrum*, and shad, *Amelanchier canadensis*, many of these in especially favored places attaining a height of 35 feet or over. Toward the southern end of the Island are a few thickets of grey birch, *Betula populifolia*, and scraggy wind distorted cedars, *Juniperus virginiana*. Not infrequently, in among the growths of trees the explorer encounters nearly impenetrable tangles of wild grape, *Vitis labrusca*; Virginia creeper, *Psedera quinquefolia*; cat brier, *Smilax rotundifolia*; and climbing bittersweet, *Celastrus scandeus*. And poison ivy, *Rhus toxicodendron*, grows profusely over a wide area.

To the bird lover and the sportsman the Island and its adjacent marshes hold out several alluring invitations. It has been said, and with probable truth, that in years past, no place of equal extent on the Massachusetts coast has been a favorite resort for more wild fowl and shore birds. And up to the present time, considering the increasing persecution of these birds, fair flights of some of the species still continue, though in recent years owing probably to incessant murderous attacks made upon them, there has been,

apparently, a deflection in their line of flight, many flocks passing by altogether, well off shore.

For twenty-five or thirty years past (if the information given me by longshoremen and gunners long familiar with the region, is correct) up to 1909, a colony of Black-crowned Night Herons (*Nycticorax nycticorax naevius*) have nested on the Island. This colony I believe is one that about thirty years ago nested in a hemlock swamp not far back from the Merrimac River in the town of Amesbury. With the cutting off of the trees in this swamp and its surroundings the birds were driven from their favorite and probably long used breeding place here and resorted to the more secluded site the Island afforded. My acquaintance with these birds in this latter place began in 1904 when of a day's gunning on the marshes I wandered back among the dunes and by chance came upon the rookery. For the next five years my knowledge of them was gained by several visits made at irregular intervals, to the region, and for a description of these, I will, with a few corrections and omissions of unimportant details, quote briefly from my notes of those dates.

August 12, 1904 — To the Plum Island marshes, gunning. The weather cloudy, threatening rain: wind, moderate northeasterly. . . . The most interesting happening of the day occurred when after tiring of gunning and tramping over the marshes, with indifferent success, I wandered back among the sand dunes toward the seashore near "Long Point" and in a deep, brushy, bowl-like depression between high dunes discovered a nesting colony of Black-crowned Night Herons. As a conservative estimate of the birds here, young and old, I placed the number at upward of 700. As there was more or less of activity and commotion among them and a continual passage of birds to and from the shore and at less regular intervals from the marshes, it was rather difficult to form an estimate. The number of nests served as a more reliable basis to judge upon. A somewhat hasty count of these resulted in 157, that I believed from appearances were, or had recently been, in use. Granting that there were two adults for each nest, and an average of three young (I believe the average would be higher than this), the total would not be far above the figure named.

I found a few young birds still in the nests but by far the larger

portion of them were able to fly. It is probable that the birds still in the nests were of a second brood, or their parents had been interrupted in their first attempts at nesting.

Guttural squawks and a ghoulish, uncanny, rasping din greeted me as I stood on the rim of the hollow and looked across the lively scene, voices that the ornithologist Wilson aptly likened to the noise made by several hundred Indians trying to choke each other! Descending into the brushy thickets, I found the place not a clean one to travel about in. Decidedly filthy in the vicinity of the nests, the trees and much of the foliage white with chalkings, and the ground beneath covered with refuse, the stench of which was keenly sensible to the olfactory nerves.

The nests were very loosely constructed, of coarse dead sticks, without any attempt at lining, apparently only thrown together and looking as if a good breeze would blow them out of the trees altogether. Some of the larger trees contained over a dozen nests each, these varying in situation from 6 to 25 feet above the ground, the ramshackle affairs built in almost every available crotch, often seemingly regardless, of the close proximity of a similar dwelling.

In moving about amid the tangle that composed the undergrowth of the place I was continually scaring up more birds for by no means had they all taken flight upon my first appearance, though the multitude that left at that time would seem to have emptied it. Sometimes, a dozen or twenty birds, chiefly adults, would take flight at once from a thicker covert, and after much flapping about and noisy, hoarse squawking become silent but sail steadily to and fro high over head, the younger birds taking refuge in the thickets of several nearby hollows among the dunes.

Some few of the young birds still on the nests, upon being disturbed at my approach or attempted investigation, would crawl out and climb clumsily about on the adjacent limbs, gawky, awkward, and scarce able to keep the balance requisite for maintaining their hold on the slender branches. Emerging on the farther side from any point of entrance, of the circular hollow, the whole area being only about two acres in extent, I caught glimpses of small groups of birds, the young and unsteady of wing, that had resorted to nearby cover. These callow birds were perched on the plum bushes or moving slowly about on the sand and doubtless

wondering what all the uproar was about. Their grayish brown coats contrasted rather markedly with the green of the foliage but against the duller tone of the sand, harmonized to a degree almost perfect until their presence was revealed by motion.

On the whole the hour spent here was a novel and interesting experience and I congratulated myself for chancing upon it, believing that an occasional visit to the place in the future, would offer an opportunity for varying my studies, previously confined, to the smaller land birds found near home.

My next visit to the locality was made the following spring, May 21, 1905, and recorded in my note-book somewhat as follows: —

“By trolley and afoot to Plum Island, down as far as ‘Long Point,’ to visit the heron rookery there. The day a fine mild, clear one with light northwesterly wind. Was accompanied on this trip by F. D. B. The object of our visit today was to secure a few sets of eggs for our collections and make a few observations on nesting habits in general. As we topped the steep sand hills and looked down on and across the wooded basin which the herons had chosen for a nesting place, one could not, even though he be of a reserved or nonchalant disposition, fail to be impressed with the lively scene there presented to view. Several hundred birds rose at our appearance on the rim of the hollow and with much flapping and wheeling about, voiced their resentment at our disturbance of their domestic peace, with discordant, raucous, guttural squawking, which was increased to a tumultuous din when we descended into the lower ground to the precincts of their nests. Through rank tangles of beach plum, black cherry, grape vine, catbrier and poison ivy, we pushed our way to the more open ground under some of the larger trees, in which many of the nests were to be found. The tangles were made much more disagreeable of penetration by chalkings and the stench of refuse underfoot, these further adding to the natural protection afforded by briars and the closely interlacing branches.

In trees of shad, poplar, maple and elm, the majority of the nests seemed to be placed, with fewer numbers in oak and tupelo. Positions varying in height, ranging from six to twenty-five or even thirty feet from the ground, available crotches, chiefly governing the choice of position. A few, probably a dozen, I noted, were

placed within a few feet only from the ground, several nearly or quite on it, but most of these were in such tangled thickets none but a weasel or winged enemy could gain access to them. The climbing of these trees was not a task for one considerate of clean clothes or sensitive nostrils for they were well white-washed, which served as a deterrent to any but the most enthusiastic. A few of the nests contained at this early date, downy young ten days or a fortnight old and the thin piping whistle-like voices of these helped to increase the uproar going on overhead among the adults. Many of the nests we visited contained sets of eggs well advanced in incubation. In fact the most of those that we saw were more or less advanced and it was only after considerable searching and difficulty that we were able to obtain a few comparatively fresh sets. As we visited several groups of trees, each containing numerous nests we had an opportunity to make note not only of the different stages of incubation but the various number of eggs making up a set. In three instances I saw nests containing only two eggs and these apparently were full sets in these cases for they were well along toward the time of hatching. In not a few other nests, three seemed to be the complement. But by far the greater number contained four and a few even five, the last named figure the highest I saw in any of them. The difference of time represented between fresh sets and the young birds of several days of age would go to show that there was considerable variation among the different pairs regarding the date of commencing household duties. A few pairs must take them up soon after their arrival in mid April; others in a more leisurely fashion as indicated by the fresher sets.

I took for my collection a few fresh sets of four and five, of the Night Herons, and a set of four of the Little Green Heron, *Butorides virescens virescens*, a nest of which I was fortunate in finding in a thicket of low bushes near the center of the hollow.

A few crows hovered around the margin of the woodland, and in several places I saw punctured, empty and broken egg shells which appeared not to have been broken after the usual manner of hatching, and from these evidences I suspected the cause of the crows neighborliness. Though in justice to the crow I would add, that it seemed not improbable that some eggs might be rolled out of the shallow nests, occasionally by the herons themselves in set-

ting on or on leaving the nests. Crow Blackbirds were in the vicinity in small numbers. Among the low growing beach plums and black cherry I found a few nests of these birds, containing sets of three and four eggs. Whether these birds take any part in nest robbing here in this locality I am from my limited observations in the region, not prepared to say, but my opinion, based on experience with them farther inland, leads me to think that they will do so on occasion. Numerous empty gun shells seen in the immediate vicinity of the rookery, and now and then the skeleton or dried remains of a heron on the ground or lodged among the branches, betokened a less excusable enemy. Some "sportsman" (so called, but spare the mark!) who thought it clever to keep in "good practise" by using these sluggish birds as a target.

The more strenuous labors of our visit being over, we secreted ourselves for a time in one of the thicker tangles and from there watched the colony settle down to a state of comparative tranquillity again. The birds came readily enough back to their home trees, after our disturbance and the deserted nests soon contained their brooding birds again and the business of life in the rookery went on as usual. I was interested in noting in the cases of some of the nests we had just robbed, that the females settled broodily upon them again as though nothing had happened to their nursery treasures. So much for the power of instinct and habit perhaps!

There was more or less of activity at all times in the vicinity of the rookery; birds flying to and from their salvaging or feeding ground along the shore, or from the quest of food out on the marshes. The arriving birds settled with flapping of wings and awkward bobbings to preserve their balance, among the trees in proximity to their nests. The arrival or departure of a bird seemed to be the signal for additional squawking and outcry on the part of his fellows. There was seldom or never a full minute of quiet. The hungry young were already beginning to pipe their wants in weak falsetto or as in the case of the older chicks with a persistent and stronger "tek-tek-tek." Whether all the guttural and variously pitched squawking of their elders were uttered in response to the insistent demands of the youngsters, would be difficult for anyone unacquainted with heron language to determine, but certain it was there was no lack of clamor and raucous din, always augmented by

the arrival or departure of birds or by any change of position among those about the rookery.

Two or three birds were still engaged in nestbuilding, or rather the repairing of last year's nests. I saw one male heron come flying in from a neighboring thicket of trees with a fair sized dead stick in his beak, and this coarse building material he proceeded to work into the rude platform of similar timber. In another instance, close by our place of concealment I saw the skeleton of a young heron, victim of some disaster of the previous year, worked in as constructive material for the nest. Rather a gruesome reminder, close at hand, for the birds of the present season were they gifted with the powers of thought or reflection.

Our leave-taking and the two mile walk along the border of the marshes, back to the trolley line was considerably hastened by the vigorous assaults of swarms of bloodthirsty mosquitoes, who disregarded all but savage standards of warfare in their attacks. But altogether this visit to the rookery was a pleasant and instructive one, resulting in our gaining a fuller knowledge of the habits of these interesting birds."

In the season of 1906 I visited the rookery but once, and then late in August when the business of housekeeping for that season was pretty well over and the place chiefly used now as a kind of rendezvous or roosting place for such of the birds as had not scattered and wandered along the coast or inland in small family flocks or individually. From the time the young became steady of wing, up to the time of departure for the South, in late October or early November, according to the mildness or severity of the season, the birds are something of wanderers, drifting from one swamp or secluded river border to another, or along the marshes and tidal creeks of the coasts. At this season I have frequently found them along the borders of several of the larger sluggish streams and brooks inland, and about the shores of the smaller reedy ponds and watering holes. At dusk and during the early evening their uncanny "*quawks*" may be heard coming eerily from the gloom overhead, as they change from one tarrying place to another.

On June 9, 1907, I made a trip to Plum Island and attempted at this time to secure photographs of the herons at the "Long Point" rookery. For a camera I had a 4 × 5 Poco, with the usual

trade lens known as a "rapid rectilinear," a three speed shutter, and a few single plate holders together with other necessary accessories, such as tripod, thread auxiliary lenses, etc. Of the half dozen or more exposures made on this trip there were but one or two that proved successful, my failure due to a certain extent, to my inexperience in using a camera and also I might add, that in the light of the knowledge gained in recent years, of a camera and its management, due to inadequate equipment for the work in hand, a better lens and more rapid shutter being necessary for the making of good photos in this particular line of work.

The weather on this occasion was typical of the best in June, the morning a clear and bright one, with a light northwest wind blowing and a few low lying white-capped clouds in the west, prophetic of possible showers later in the day. In making the two mile tramp down the shore from the trolley line I found the beach much changed by the storms of the previous winter. Much of the sand along the upper end of the Island was cut away and the beach narrowed, the portions thus removed being deposited in shoals and bars farther down along the shore, in the region of "High Sandy Beach" and from this point along toward the southern extremity of the Island.

Barren though these low lying sandhills may be at some seasons and seem to some people, yet they possess a charm and beauty peculiarly their own, and never seemed to me more picturesque and delightful than on this morning. The rolling wind swept dunes with their green caps of waving beach grass and low plum; the violet, porphyry particled sand blown into delicate curving lines along their slopes, blending harmoniously with the paler bronze of the sand mass; with now and then glimpses to be caught between the dunes of the fresh and vivid greens of the level marshes, and distant purple inland hills; and on the water side, the deep blues and changing greens of the sparkling, restless sea with the duller purple of the distant Cape Ann; the crystalline, actinic blue of the sky; all these burnished and blended, mellowed and permeated by the bright sunlight of a perfect June day.

"Breathes there a man with soul so dead . . ." whose æsthetic senses would not respond, and quicken with appreciation at this enchantment wrought by Nature's alchemists?

Distance along the level beach is deceitful and a walk of any given length, or with the goal or landmark ahead in sight, is seemingly much longer because of the level unbroken character of the surroundings and the difficulty of walking, the coarse yielding sand affording but insecure footing for the pedestrian. Close to the water's edge one finds the firmest though not always the safest going, if dry feet are a consideration.

Each wave of the ebbing tide leaves its autograph on the sand, a record of "heights attained." The beach is strewn with the shipwrecked homes of thousands of the order *Mollusca* and the varied flotsam of the winter storms.

Nearing the neighborhood of the rookery I found the beach scored with the tracks of many herons. And about a half mile ahead I descried apparently a patch of sand darker than usual and through the glass learned that it was a company of nearly 200 birds, feeding along the shore, close to the water's edge. Here the herons as well as many species of shore birds, have a spacious feeding ground, the former during the entire season with us, the latter for the brief space they tarry in this latitude; with food cast up in abundance daily, the offal of the sea. A closer view of this flock I thought would be decidedly interesting and a close range shot at them with the camera, would give a picture of interest and value. But long before I could get within range, even before I was within 300 yards, they all took wing and went nearly a mile farther down the beach. Yet my desire for a picture of them in such surroundings was keen, so I put into practise the best tactics in the fine art of stalking, taking to the leeward of the dunes and being careful to keep well concealed behind them. But a little later on making a reconnoissance over the tops of these opposite to where I suppose the flock to be, I was rewarded with no better view of them than I had before for they had again flown, this time too far down the beach for me to follow. Some bird passing overhead had probably given warning to his fellows of the approach of an enemy.

Returning up the beach, for in my chase I had gone considerably past the rookery, I found the moist sand, much traced, crossed and recrossed, with the imprints of many herons' feet, forming a mosaic of triangular figures, but one without definite plan or de-

sign in arrangement. Soon entering the sand hills again I came at length to the immediate vicinity of the rookery, well screened and hidden from the casual passerby in its secluded hollow. A few birds are to be seen sailing too and from the shore or from their quest out on the acres of marshland. But for these few voyagers one might never suspect the close proximity of such a colony.

Before exposing myself to view, I prepared my camera, with the vain hope of securing a picture of the birds as they would take flight when I appeared on the rim of the basin. Several hundreds of them arose with much tumult of flapping and squawking when I first gained the top of the slope and came fairly into view. Such a lively scene of wild life and activity as they present at such a time, would be well worthy the attempt of a professional photographer to portray, but my attempts in this instance were unsatisfactory, for reasons previously noted.

By this date the serious business of housekeeping engaged the time and attention of nearly all the herons. Only in one or two instances did I note birds carrying nest building materials and only a few comparatively fresh sets of eggs. By far the greater number of nests contained eggs well advanced in incubation and not a few already contained young birds, of varying days of age. Climbing one of the first good sized trees that I came to, a red maple containing four or five nests, I found in one of these a couple of yellow eyed, frightened young, just arriving at the "pin feather" age, their primaries and longer tail feathers just beginning to be prominent. I endeavored to obtain the portraits of these two interesting fledglings, but later the dark room again pronounced failure, not however because of the bad behavior of my subjects for they were as quiet and accommodating as heron manners would permit.

The tardiness of the season was illustrated in the vegetable world by the condition of the shad trees here, many of them being just in bloom, nearly or quite a month later than their usual time on normal seasons inland. The backward season, however, apparently made little difference in the heron world for conditions here on this date were similar to those on a like date during a normal season.

In the midst of my investigations today, being intent on the many interesting things going on around me, a smart shower came up,

unnoticed until the first large drops called it unpleasantly to my attention, then too late for me to seek a secure cover, so taking refuge in the thickest tangle at hand, I enjoyed, in a rather melancholy manner, in this damp shelter, the lunch I had brought along and at the same time served most unwillingly as a free lunch to swarms of hungry mosquitoes. Lunch well over and the rain still continuing without sign of immediate slackening, I decided on a hasty retreat back to the car line arriving there in due season in a somewhat moistened condition; but not wholly disappointed with my visit and the things accomplished, and resolved to come again later in the season.

Accordingly, a week later, June 16, I again visited the Island and rookery with the intention of making further observations to supplement the unfinished work of the previous visit. The weather on this date was clear and uncomfortably warm, with a gentle southwesterly wind blowing. Arrived on the beach about 9 A.M. and found the tide on the ebb and the ocean exceedingly calm. Far down the beach in the direction I was going I saw again a good sized flock of the herons feeding on the refuse along shore, but these kept well ahead of me, making short flights from time to time as I approached them. Numbers, with them, seem to beget wariness and fear, for always when feeding in company in this manner, I have found them to be extremely shy, whereas, when singly, or in the case of only a few, one can frequently work up quite close to them without alarming them.

So calm was the water and quiet the air on this morning that arrived at a point, off abreast of the rookery, I could plainly hear the voices of the birds, young and old, in their haunts a quarter of a mile away. I found the usual activity prevailing in the vicinity of the nests. This was increased to a noisy clamor of alarm when I entered the brushy growth surrounding them. Today as on several previous occasions I secreted myself in some of the thick undergrowth, that afforded a good outlook over many of the nearby nests. In getting into this position I noted very few eggs in any of the nests, most of them at this advanced date being hatched. I saw one nest containing five eggs and secured a fair photograph of it but only in three or four others did I see eggs.

From my vantage point in the dense thicket I watched the do-

mestic affairs of the birds for over two hours and recorded several curious and entertaining things concerning their habits. I learned that Madam Heron is a careful and solicitous mother although the coarsely made and ill kept nest might indicate otherwise. She is very loath to leave her eggs or newly hatched chicks, long exposed to the hot sun or open to a possible discovery by some passing enemy. Birds that had been frightened from their nests when I entered their precincts came readily back to them after a period of from five to eight minutes, after I had hidden myself. These flying low, with sluggish flapping of wings, over the trees would awkwardly alight near their nests and after a greater or lesser interval of staring vacantly about, the slang word "rubbering" aptly describing this performance, they would, more clumsily still, climb down to their nests and settle on the eggs; or in the case of very young birds perch on the nest in a crouching attitude and spread their wings slightly, standing thus to shelter the callow chicks from the intense heat.

How a returning bird could distinguish its own nest from countless others like it amid the surrounding confusion and tangle is one of the curious facts belonging to the realm of instinct, and probably beyond our human ken.

Those nests containing young of a few days of age only, were visited often by the parents at intervals of from fifteen to thirty minutes during the time I kept watch of them near my place of concealment. Their method of feeding, by regurgitation was an interesting procedure to witness, although a little revolting perhaps to persons of a sensitive nature, used to more genteel manners, but withal quite satisfactory to the baby birds who know no other than *a la l'Heronaïse*. Up to what age this manner of feeding is continued I could not learn. Many of the young that I judged to be well over three weeks old were still fed in this way. A later visit to the rookery might help to determine this question.

The piping of the young birds was incessant, the volume and force of individual voices varying according to the age of the complainant. The very young birds uttered a peculiar weak shrill whistle-like note not so very unlike the plaintive peeping of domestic chicks, while the older birds voiced their wants with an emphatic "tet tet tet" or "yick-yick-yick." So impressed on my memory are

the varied voices and clamor of the birds here, and the sounds of the surrounding region, that I can even now after several years, call them all distinctly to mind, from the plaintive piping of the hungry young to the answering or alarmed raucous squawks of the mature birds, and the low, droning undertone of the surf on the shore or the swish and flutter of the leaves over my hiding place as the hot wind drew through the hollow. And I have but to hear the uncanny "quawk" of a night heron passing over of a summer evening, to bring at once to my mind the pleasant hours spent in the haunts of the birds here on the Island.

To-day, while sitting here in my brushy covert under some low and stunted trees, watching the comings and goings of the birds, a deer came daintily and noiselessly along through the undergrowths and caught sight of me almost at the moment that I discovered him. One inquiring glance of a moment served to satisfy him of the nature of the danger he was encountering and away he went in precipitate haste with white flag flying, doubtless greatly surprised to find his haunts inhabited by other tenants than the feathered ones he was familiar with.

Seven other species of birds beside the Green and the Black-crowned Night Herons, I have found or am certain breed here on Plum Island in the immediate vicinity of the rookery. At least three pairs of Crows nested in the larger trees in the rookery proper and probably more in the several neighboring wooded hollows. Crow and Red-winged Blackbirds were fairly numerous. I counted eleven nests of the former in the low undergrowth of the basin and found two of the Redwings in the rose bushes and grass in a little open space near the center and lowest part of the hollow.

Kingbirds while not in close proximity to the heronry were common out in the more open bushy country near at hand. Cat birds and Brown Thrashers nested in the thickest tangles and from the many Maryland Yellowthroats seen and heard, I concluded there must have been nearly a dozen pairs nesting in the nearby lowland cover. One of the characteristic bird voices of the Island, wherever you go, back a little way from the shore and deeper rumble of the surf, is that of the Savannah Sparrow (*Passerculus sandwichensis savanna*). His song though weak and insect-like has a carrying quality and reaches one's ear when the small minstrel

is several hundred yards away, and often impossible to locate. From the numbers of these dusky and elusive sprites that I have seen and heard all along the Island and borders of the marshes through the breeding season, I should judge that there must be many nesting pairs of them there.

The Song Sparrow is commonly seen throughout all the warmer months as is also the Vesper Sparrow. Without doubt both these species breed here. Probably a careful survey of the entire region would add several more nesting species to the list. During the month of April, September and October, thousands of sparrows tarry for a time on the Island, finding there an abundance of favorite food, and shelter to their liking. With the possible exception of the rank growths of wild rice, *Zizania aquatica*, found along the flats of the Merrimac River, I know of no place, locally, where the bird student may find a greater number of these birds during the seasons of migration.

My next visit to the rookery was not made until the spring of 1908 when on May 10 I spent a few hours in the locality, finding at this time an apparent increase in the number of herons present and nesting. And this increase despite a considerable amount of harrying and wanton disturbances made during the year previous, by thoughtless and unsportsmanlike persons. Rumors of these annoyances had reached my ear from time to time and their truth was attested to, even at this late date, by unmistakable evidences, such as empty gun shells and shrivelled carcasses or skeletons of last season's birds in the undergrowth or caught in the thicker trees, and by dismantled nests and faded pieces of egg shells protruding here and there in the sand.

At the time of this visit many of the nests already contained full sets of eggs and one I saw with young birds two or three days old, showing that family duties must have commenced at an early date this spring. Several pairs of Green Herons, (*Butorides virescens virescens*) were nesting here also, their nests placed on or near the ground among the rank growth of bushes and grass in the lowest portion of the hollow.

A cold rain storm on this occasion cut my visit short and it was not until four weeks later, June 7, that I was again able to get there.

Nesting activities among the birds were at their height by this time, the all important and laborious duties attending the rearing of broods, demanding continual care and attention on the part of the parents. The incessant calls of the ever hungry young, together with the responsive voices of their elders served to make the immediate neighborhood a noisy if not melodious place and this in addition to the constant coming and going of the birds to and from their fishing grounds lent an air of business and activity more fully apparent than on any of my previous visits.

I climbed a slender maple to nests containing four and five young respectively. These thinly clad little fellows did not take kindly to my advances toward a closer acquaintance, but resented any familiarity, with resort to a thoroughly disgusting performance, that of vomiting onto the edge of the nest, their partially digested food of fish and mussels, this was a defensive measure no doubt or a warning to me to keep my distance, and had my sense of smell been at all over sensitive, I probably would have heeded it.

At another nest that I visited, where the young were older and more fully developed a different means of defence was employed. The largest fellow of the four in the nest, drew himself grandiloquently up to the proud height of some ten inches and awkwardly spreading his wings, and balancing on rather unsteady legs, made several rapid and quite forceful thrusts with his beak, uttering with each thrust and elongation of his neck a husky squawk, quite worthy of the best attempt of his elders. Such an energetic attempt on the part of so youthful and unstable a bird was extremely amusing to me, an onlooker, but a sufficiently serious matter to the performer whose eyes kindled with a savage anger and fear each time I moved, near him.

For one equipped with a small hand camera, carrying a good lens and rapid shutter, opportunities for photographs, showing characteristic phases of nest life of these birds, would have been many and varied. As circumstances were, most of the nests being in the deeper shade or the young birds in constant motion, work with ordinary equipment was out of the question.

Could I have realized that this was the last season that the birds would be nesting here I doubtless would have visited the place

several times again this season, but considering them a permanent fixture of the region or at least pretty certainly to be depended upon to be present each year, I neglected to follow them up closely, and so lost an opportunity for securing further interesting data concerning them, for on visiting the locality the following year, May 23, 1909, I found the rookery completely deserted. The reason for this condition was not plainly apparent, and left the question therefore rather to conjecture than to any satisfactory solution. It was true that the herons during the past two seasons had been much persecuted here and that during the winter of 1908-09 a few of the larger trees had been cut in the wooded hollow in which they had made their homes and more of the trees of the shad and cherry species had succumbed to the attacks of the pestiferous brown tail moths, but notwithstanding these disturbing factors, much good cover was left unharmed, and the herons are remarkably tenacious and persistent in regard to nesting in a favorite locality in the face of annoying circumstances. On the whole it seemed to me that there must have been more pernicious contributory causes to drive them from this place, used probably for over twenty-five years.

I have visited the Island each year since that time and searched the brushy cover, pretty thoroughly, well down toward the northern Ipswich boundary, and although I have seen a few scattered herons along the creeks and ponds of the marshes, which would seem to indicate nesting somewhere in the locality, I have failed to find further proof of a nesting colony.

Early in the present year I was informed by one familiar with the waterways about the southern extremity of the Island, that the herons had been nesting for a few seasons of late, in numbers, on a small wooded islet in that vicinity. Subsequent inquiries and some little searching on my own part have failed to locate the colony, though the frequency with which one still sees the herons flying about or feeding along the marshes would indicate the presence of a rookery not far distant.